

AUTHORS:

Turetskiy, A. Kh., Bookov, V. V.  
S/044/62/000/004/015/099  
C111/C444

TITLE:

Asymptotic inequalities for conjugate trigonometric polynomi-  
als

PERIODICAL:

Referativnyj zhurnal, Matematika, no. 4. 1962, 16,  
no. 2, 38-48. ("Izv. AN BSSR. Ser. fiz.-tekhn. n.", 1961,

Considered is the determination of the least upper bound

TEXT:

on the class of the trigonometric polynomials

$\bar{I}_{m,n} = \sup_{x \in [-\pi, \pi]} \max_{n \geq 1} \sum_{i=1}^n (B_i \cos vx - A_i \sin vx)$

$T_n(x) = A_0 + \sum_{v=2}^n (A_v \cos vx + B_v \sin vx)$

which in the equidistant knots  $x_k = \frac{2k\pi}{2n+1}$  satisfy the condition

whe-  
and the

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520011-2

Card 1/2 400/004/005/099

then the integral

$\int_{-\pi}^{\pi} f(x) dx$

the asymptotic value of this least upper bound for  $n \rightarrow \infty$ .

acter's note: Complete translation.]

S/044/62/000/004/C15/099  
C111/C444

AUTHORS: Turetskiy, A. Kh., Bobkov, V. V.  
TITLE: Asymptotic inequalities for conjugate trigonometric polynomials  
PERIODICAL: Referativnyy zhurnal, Matematika, no. 4. 1962, 16,  
abstract 5B83. ("Izv. AN BSSR. Ser. fiz.-tekhn. n.", 1961,  
no. 2, 38-46)  
TEXT: Considered is the determination of the least upper bound

$$\bar{I}_{m,n} = \sup_{x} \max_{\nu=1}^n (B_{\nu} \cos \nu x - A_{\nu} \sin \nu x)$$

on the class of the trigonometric polynomials

$$T_n(x) = A_0 + \sum_{\nu=2}^n (A_{\nu} \cos \nu x + B_{\nu} \sin \nu x)$$

which in the equidistant knots  $x_k = \frac{2k\pi}{2n+1}$  satisfy the condition

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S/044/62/000/004/015/099  
C111/C444

Asymptotic inequalities for ...

$$|a_m T_n^m(x_k) + a_{m-1} T_n^{(m-1)}(x_k) + \dots + a_2 T_n^2(x_k) + a_0 T_n(x_k)| \leq 1$$

where  $a_0, a_1, \dots, a_m$  are given coefficients. If  $\alpha_\nu, \beta_\nu$  denote the real and the imaginary part of the sum  $\sum_{k=0}^m a_k (i\nu)^k$  and if there is

$$f(x) = \sum_{\nu=1}^{\infty} \frac{\beta_\nu \cos \nu x - \alpha_\nu \sin \nu x}{\alpha_\nu^2 + \beta_\nu^2}$$

then the integral

$$\frac{1}{\pi} \int_0^{2\pi} |f(x)| dx$$

is the asymptotic value of this least upper bound for  $n \rightarrow \infty$ .

[Abstracter's note: Complete translation.]

Card 2/2

TURETSKIY, A.Kh.

Classes of saturation in C-space. Izv. AN SSSR. Ser. mat.  
25 no.3:411-442 My - Je '61. (MIRA 14:6)  
(Fourier's series) (Spaces, Generalized)

TURETSKIY, A.Kh.

Saturation classes for some methods of summation of Fourier series  
of continuous periodic functions. Usp. mat. nauk 15 no.6:149-158  
N-D '60. (MIRA 14:2)

(Functions, Periodic)

(Fourier's series)

TURETSKIY, A.Kh.

Quadratic formula with an even number of nodes accurate for  
trigonometric polynomials. Dokl.AN BSSR 4 no.9:365-368 S '60.  
(MIRA 13:9)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina. Predst.  
akad. AN BSSR V.I. Krylovym.  
(Equations, Quatric)

TURETSKIY, A.Kh.

Class of saturation for the "logarithmic" mean method for summation  
of Fourier series. Dokl.AN BSSR 4 no.3:95-100 Mr '60.  
(MIRA 13:6)  
(Fourier series)

TUKERTSKIY, A.Kh., B.c Phys-Math Sci--(aica) "Studies on the theory  
of the approximation of functions." Minsk, 1958. 19 pp (Min of Higher  
Education USSR. Belorussian State U im V.I.Lenin), 230 copies. List  
of author's works at end of text (15 titles) (KL,44-58, 11\*)

- 1 -

TURETSKIY, A.Kh.

Quadrature formulas correct for trigonometric polynomials.  
Uch. zap. BGU no.1:31-54 '59. (MIRA 12:11)  
(Interpolation) (Integrals)

TURETSKIY, A.Kh.

Methods for the summation of Fourier series whose classes of saturation are trigonometric polynomials. Dokl. AN BSSR 3 no.4:  
136-142 Ap '59. (MIRA 12:10)

1.Predstavleno Akademikom AN BSSR V.I. Krylovym.  
(Fourier series)

TURETSKIY, A. Kh.

Classes of saturation of various orders. Class of saturation  
for the Valle-Poussin summation method. Dokl.AN BSSR 2 no.16:  
395-402 N '58. (MIRA 12:8)

1. Predstavлено академиком АН БССР В.И.Крыловым.  
(Approximate computation)

TURITSKIY, A.Kh.

Evaluation of mean approximation of continuous periodic functions  
by trigonometric interpolation polynomials. Dokl. AN Ukr. SSR 70:7  
7-11 '59. (MIR 1977)

1. Belorusskiy gos. universitet im. V.I. Lenina. Preobrazvlenie skaz.  
AN UzSSR T.A. Sarymsakovyy.  
(Functions, Periodic)

16(1)  
AUTHOR:

Turetskiy, A.Kh.

SOV/20-126-6-14/67

TITLE:

On Saturation Classes for Certain Methods of Summing Fourier  
Series of Continuous Periodic FunctionsPERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 6,  
pp 1207 - 1209 (USSR)

ABSTRACT:

Let the summation method  $\gamma$  be defined by the sequence  $\gamma_k(\xi)$   
which is defined in a domain  $\Gamma$  with the condensation point  $\omega$   
so that to every  $2\pi$ -periodic function

$$f(x) \sim \frac{a_0}{2} + \sum_{k=1}^{\infty} (a_k \cos kx + b_k \sin kx) \text{ there corresponds}$$

$$\text{a series } F(x, \xi) = \frac{a_0}{2} + \sum_{k=1}^{\infty} \gamma_k(\xi) (a_k \cos kx + b_k \sin kx)$$

which is uniformly convergent with respect to  $x$  in a certain  
domain (at least in the neighborhood of  $\omega$ ). Let a nonnegative  
function  $\varphi_{\gamma}(\xi)$  exist which tends to 0 with  $\xi \rightarrow 0$ , so that  
for every continuous  $2\pi$ -periodic  $f(x)$  which is different from

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On Saturation Classes for Certain Methods of Summing  
Fourier Series of Continuous Periodic Functions SOV/20-126-E-14/67

a trigonometric polynomial of order  $\nu$  it holds :

$\max_x |f(x) - F(x, \xi)| > a \varphi_{\gamma}(\xi)$ . Let furthermore exist

functions  $f(x)$  for which it holds :

$\max_x |f(x) - F(x, \xi)| < b \varphi_{\gamma}(\xi)$ ;  $a > 0$ ,  $b > 0$  depend on  $f$ .

Then  $\gamma$  is called saturated of order  $\nu$  and with the saturation approximation of order  $O(\varphi_{\gamma}(\xi))$ . The set of the continuous,

$2\pi$ -periodic functions which are different from trigonometric polynomials of order  $\nu$  and for which it is :

$|f(x) - F(x, \xi)| = O(\varphi_{\gamma}(\xi))$  is denoted as saturation

class of order  $\nu$  belonging to the method  $\gamma$ .

Theorem : If there exists a nonnegative function  $\varphi_{\gamma}(\xi)$  ;

$\lim_{\xi \rightarrow \omega} \varphi_{\gamma}(\xi) = 0$  to the given summation method  $\gamma$  so that

for every  $k > \nu$  and  $\xi \rightarrow \omega$  it holds

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On Saturation Classes for Certain Methods of  
Summing Fourier Series of Continuous Periodic Functions

SOV/20-126-6-14/67

$$1 - \gamma_k(\xi) \sim c_k \rho_\gamma(\xi),$$

where  $c_k \neq 0$  is a constant depending on  $k$  but not on  $\xi$ ;  
then  $\gamma$  is saturated of order  $\varphi$  with the saturation approximation of order  $O(\psi_\gamma(\xi))$ .

Theorem : If furthermore  $\varphi = 0$ ,  $c_k = b k^2$ ,  $b$  absolute constant,

$\frac{1}{2} + \sum_{k=1}^{\infty} \gamma_k(\xi) \cos kt > 0$ , then the saturation class belonging to  $\gamma$  is identical with the set of the continuous periodic functions  $f(x)$  with  $f'(x) \in \text{Lip}^1$ .  
Two further similar theorems are given.

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On Saturation Classes for Certain Methods of  
Summing Fourier Series of Continuous Periodic Functions

SOV/20-126-6-14/67

There are 4 non-Soviet references, 3 of which are French;  
and 1 Hungarian.

ASSOCIATION: Belorusskiy gosudarstvenny universitet imeni V.I. Lenina  
(Belorussian State University imeni V.I. Lenin)

PRESENTED: March 14, 1959, by S.L. Sobolev, Academician

SUBMITTED: June 28, 1958

Card 4/4

16(1)

AUTHOR:

Turetskiy, A.Kh.

SOV/20-126-1-7/62

TITLE:

On Saturation Classes in the Space C (O klassakh nasyshcheniya  
v prostranstve C)PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1,  
pp 30 - 32 (USSR)

ABSTRACT:

Theorem : Let a summation method  $\tilde{\gamma}$  be defined by the sequence of functions  $\{\tilde{\gamma}_k(\xi)\}$  which is defined in a domain with the condensation point  $\omega$ . Let a positive function  $\varphi_{\tilde{\gamma}}(\xi)$  exist, tending monotonely to 0 for  $\xi \rightarrow \omega$ , a natural number  $p$ , and the constants  $a_0 + a_1, \dots, a_p$  so that for every natural  $k$  and  $\xi \rightarrow \omega$  it holds :

$$(1) 1 - \tilde{\gamma}_k(\xi) \sim (a_0 k^p + a_1 k^{p-1} + \dots + a_{p-1} k + a_p) \varphi_{\tilde{\gamma}}(\xi).$$

$$\text{Let } f(x) \sim \frac{a_0}{2} + \sum_{k=1}^{\infty} (a_k \cos kx + b_k \sin kx) \text{ and } F(x, \xi) = \\ = \frac{a_0}{2} + \sum_{k=1}^{\infty} \tilde{\gamma}_k(\xi) (a_k \cos kx + b_k \sin kx).$$

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## On Saturation Classes in the Space C

SOV/20-126-1-7/62

Then for all real  $x$  and sufficiently small  $h > 0$  it follows  
from

$$(2) \quad |f(x) - F(x, \xi)| = o[\varphi_{\gamma}(\xi)]$$

for even  $p$  :

$$(3) \quad |\Delta_h^p f(x)| = o(h^p)$$

and for odd  $p$  :

$$(4) \quad |\Delta_h^p \tilde{f}(x)| = o(h^p),$$

where  $\tilde{f}(x) = \sum_{k=1}^{\infty} (b_k \cos kx - a_k \sin kx)$  and  $\Delta_h^p f(x) =$   
 $= \sum_{k=0}^p (-1)^k c_p^k f[x + (p - 2k)h]$ . Besides (1) let the following  
condition be satisfied : Let a constant  $K > 0$  exist so that from  
 $|f(x)| \leq M$  it follows :  $|F(x, \xi)| \leq MK$  (for all  $x$  and  $\xi$  near  $\omega$ ).  
 Then the inversion of the theorem holds too : From (3) and

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On Saturation Classes in the Space C

SOV/20-126-1-7/ 62

(4) respectively it follows (2).

Among others the summation methods of Abel - Poisson, Feyer, Cesaro, Hölder, Bernshteyn - Rogosinski, Voronoy etc. satisfy the conditions of the theorem. F.I. Kharshiladze is mentioned in the paper.

There are 8 references, 3 of which are Soviet, 3 French, 1 English and 1 Hungarian.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet imeni V.I. Lenina  
(Belorussian State University imeni V.I. Lenina)

PRESENTED: January 17, 1959, by A.N. Kolmogorov, Academician

SUBMITTED: January 5, 1959

Card 3/3

TURETSKIY, A.Kh.

One of the best summation formulas. Uch.zap.BGU no.32:49-57  
' 57. (MIRA 11:12)  
(Mathematical analysis)

"APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757520011-2

TURETSKIY, A.Kh.

Remarks on the inequalities of A. A. Markov and S.N. Bernstein.  
Uch.zap.BGU no.32:59-62 '57. (MIRA 11:12)  
(Inequalities (Mathematics))

APPROVED FOR RELEASE: 03/14/2001

CIA-RDP86-00513R001757520011-2"

SOV/20-121-6-7/45

AUTHOR: Turetskiy, A.Kh.

TITLE: On the Class of Saturation for the Method of Hölder for the  
Summation of Fourier Series (O klasse nasvshcheniya dlya  
metoda Gel'dera summirovaniya ryadov Fur'ye)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 6, pp 980-983 (USSR)

ABSTRACT: At the Third Union Congress of Mathematicians in Moscow, Favard  
proposed to determine the classes of saturation in the sense of  
Zamansky [Ref 2,3] for the summation method  $H^r$ ,  $r > 0$ . The author  
carried out this proposal and formulates seven theorems and  
lemmas without proof, e.g.:

1. The method  $H^r$ ,  $r > 0$ , is saturated with the order of approximat-  
ion of the saturation  $\frac{\ln^{r+1} n}{n}$ .
2. In order that the best approximation  $E_n(f)$  of a continuous  
 $2\pi$ -periodic function by trigonometric polynomials of at most  
 $n$ -th order ( $n \geq 2$ ) satisfies the condition  $E_n(f) = O(\frac{\ln^{r+1} n}{n})$   
it is necessary and sufficient that there exists a constant  $A > 0$   
such that for all real  $x$  and  $0 \leq h \leq \frac{1}{2}$  there holds:  
 $|f(x+h) + f(x-h) - 2f(x)| \leq Ah |\ln n|^{r-1}$ .

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On the Class of Saturation for the Method of Hölder for the SOV/20-121-6-7/45  
Summation of Fourier Series

3. In order that  $|H_n^2(x) - f(x)| = O(\frac{\ln n}{n})$  it is necessary and sufficient that the integral

$$\int_{-\infty}^{1/2} \left(1 + \frac{\ln t}{\ln \varepsilon}\right) \frac{f(x+t) + f(x-t) - 2f(x)}{t^2} dt$$

is uniformly bounded with respect to  $x$  and  $\varepsilon > 0$ . Here  $H_n^2$  is the Hölder sum of second order.

There are 5 references, 4 of which is Soviet, 1 English, and 3 French.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet imeni V.I.Lenina  
(Belorussian State University imeni V.I.Lenin)

PRESENTED: April 25, 1958, by S.L.Sobolev, Academician

SUBMITTED: November 12, 1957

Card 2/2

TURETSKII, A. M.

TURETSKII, A. M. and L. I. ULITSKII. Puti koksokhimicheskoi promyshlennosti Ukrayiny po piatiletnemu planu; populiarnyi ocherk. [Khar'kov], Ukrains'kii rabitnik, [1/39].  
71 p. (Seriia "Piatiletka za chetyre goda".) DLC: TP336.T8

SO: LC, Soviet Geography, Part I, 1951, Uncl.

TURETSKII, A.M.

TURETSKII, A.M. and L.I. ULITSKII. Pute koksokhimicheskoi promyshlennosti  
Ukrainy po piatiletnemu planu; popularnyi ocherk. (Khar'kov) Ukrains'kyi  
robitnyk, [1930]. 71 p. (Seriiia "Piatiletka za chetyre goda").  
DLC: TP336.T8

SO: LC, Soviet Government, Part II, 1951/Unclassified

TURETSKITE, T.A.

Rheumatic disorders of the nervous system. Sov.med. 22 no.11:24-28  
N'58 (MIRA 11:11)

1. Iz 1-y Sovetskoy klinicheskoy bol'nitsy (glavnnyy vrach I.T.  
Yeliseyev) Vil'nyusa.  
(NERVOUS SYSTEM, dis.  
caused by rheum. (Rus))  
(RHEUMATISM, compl.  
NS dis. (Rus))

TURETSKIY, I.

Improving the supply of enterprises and the supply industry. Vop.ekon.  
no.4:108-113 Ap '57. (MIRA 10:5)

1.Predsedatel' Komissii Vsesoyuznogo soveta nauchno-tekhnicheskikh  
obshchestv po material'no-tekhnicheskому snabzheniyu i sbytu.  
(Russia--Industries)

LYUBOVICH, Yuriy Osipovich; LOKSHIN, E.Yu., doktor ekon. nauk,  
retsenzent; LETENKO, V.A., kand. ekon. nauk, retsenzent;  
TURETSKIY, I.L., retsenzent; FASOLYAK, N.D., kand. ekon.  
nauk, retsenzent; YAKOBI, A.A., kand. ekon.nauk, retsenzent;  
LEPNIKOVA, Ye., red.

[Working capital and its use in U.S.S.R. industry] Oborotnye  
fondy i ikh ispol'zovanie v promyshlennosti SSSR. Moskva,  
(MIRA 17:4)  
Izd-vo "Mysl'," 1964. 302 p.

KRAINSKIY, Abram Isayevich; TURETSKIY, I.L., dotsent, retsentent;  
KOVALEVSKIY, V.G., red.; CHFAS, M.A., red.izd-va; SOKOLOVA,  
L.V., tekhn.red.

[Organization of material accounting in machinery manufacturing  
enterprises] Organizatsiya ucheta materialov na mashinostroitel'-  
nom predpriatii. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.  
lit-ry, 1959. 151 p. (MIRA 12:4)  
(Machinery industry--Accounting)

TURETSKIY, I. M.

Doc Med Sci - (diss) "Development of abdominal-pelvic innervation  
in man." Semipalatinsk, 1961. 18 pp; (Kazakhstan State Medical  
Inst); 350 copies; price not given; (KL, 5-61 sup, 200)

TURETSKIY, I.M.

Anomaly of the vertebral artery. Trudy Semipal. med. inst. 2:153-156  
'59. (MIRA 15:4)

1. Kafedra normal'noy anatomii Semipalatinskogo gosudarstvennogo  
meditsinskogo instituta (zav.-kafedroy -- dotsent I.M.Turetskiy).  
(SPINE--BLOOD SUPPLY)

TURETSKIY, I.S., inzhener.

Reconditioning electrodes of butt welding machines by means  
of fusion. Vest.mash. 34 no.6:90-91 Je '54. (MLRA 7:7)  
(Electrodes)

MALKIN, B.M.; TURETSKIY, I.Yu., kand. tekhn. nauk, retserzent

[Magnetic attachments for machine tools] Magnitnye pri-sposobleniya k metallorezhushchim stankam. Moskva, Ma-shinostroenie, 1965. 202 p. (MIRA 18:3)

MIKHAYLOVER, M.V.; TUREVSKIY, I.S.

Certain problems in the technology of the manufacture of the fundamental parts of pumps under conditions of experimental production. Mash. i neft. obor. no.11:26-34 '63 (MIRA 17:7)

1. Moskovskiy zavod eksperimental'nykh mashin Gosudarstvennogo nauchno-issledovatel'skogo i proyektchnogo instituta neftyanogo mashinostroyeniya.

TURETSSKIY, I. S.

USSR/Engineering - Welding

Card : 1/1

Authors : Turetsskiy, I. S., Engineer

Title : Restoring the electrodes of contact welding machines by fusing on material

Periodical : Vest. Mash., 34, Ed. 6, 90 - 91, June 1954

Abstract : A description is given of the use of red-copper electrodes for welding at the "Krasnyy Don" factory, and the method of restoring them to their original form.

Institution : ....

Submitted : ....

TURETSKIY, I. YE.

PA 58T85

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USSR/Mines and Mining  
Coal

Jul 1947

"Chernogor Coals of the Khakassk Coal Beds," I. Ye.  
Turetskiy, Engr, VNIIT, 1 p

"Stal'" No 7

Briefly gives some of characteristics of types of  
coals mined in Chernogor shafts in Minusinsk rock coal  
basin, located 18 km from Abakan in Krasnoyarsk Kray.  
At present, five seams are being worked. Gives no  
production figures. Analyzes composition of coal.

FDB

58T85

TURETSKIY, I.YU

MARKOV, Arkadiy L'vovich; KONOVALOV, Nikolay Petrovich; KULCHIN, N.I., prof.,  
red.; TURETSKIY, I.Yu., kand. tekhn. nauk, red.; SHAVLYUGA, N.I.,  
dots., kand. tekhn. nauk, red.; VOLOSHEVICH, F.P., inzh., retsenzent;  
VASIL'YEVA, V.P., red. izd-va; POL'SKAYA, P.G., tekhn. red.

[Checking gear wheels] Kontrol' zubchatykh koles. Pod red. N.I.  
Kolchina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry.  
1958. 90 p. (Bibliotekha zuboreza-novatora, no.9). (MIRA 11:8)  
(Gear cutting)

VYGODER, Mikhail Izrailevich; MITSENGENDLER, Mikhail Litmanovich; KOLCHIN, N.I., prof., doktor tekhn.nauk, red.; TURETSKIV, I.Yu., kand. tekhn.nauk, red.; SHAVLYUGA, N.I., dotsent, kand.tekhn.nauk, red.; KUCHER, I.M., kand.tekhn.nauk, retsenzent; VASIL'YEVA, V.P., red. izd-va; POL'SKAYA, R.G., tekhn.red.

[Calculations and examples of adjustments of gear planing and shaping machines] Raschet i primery naladoch subodolbeznykh i zubostrogal'nykh stankov. Pod red. N.I. Kolchina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 117 p. (MIRA 12:2) (Bibliotekha zuboreza-novatora, no.4)  
(Gear-cutting machines)

TURETSKIY, I. Yu.

Turetskiy, I. Yu. Measurement of Periodic Errors in Turbine Gears p. 223

Interchangeability, Accuracy and Measuring Methods in Machine Building, Moscow,  
Vashgiz, 1955, 251 pp. (Sbornik Nauchno-tekh. obshch. mashinostroitel'noy  
promyshlennosti, Leningradskoye oblast pravleniya, kn. 47).

This collection of articles deals with the topics discussed at the 3rd  
Leningrad Sci. and Engineering Conference on Interchangeability, accuracy and  
Inspection Methods in Machine-building and Instrument-making, held 18-22 Mar 1957.

TURETSKIY, I.Yu. (Leningrad)

Measuring cyclic deviations of turbine gear wheels. [Izd.]  
LONITOMASH 47:223-234 '58.  
(MIRA 11:10)  
(Gearing--Measurement)

82658

S/123/59/000/09/10/036  
A002/A001*1D.5200*Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 9, p. 91,  
# 33534AUTHOR: Turetskiy, I. Yu.

TITLE: Measurement of Cyclic Errors in Turbine Gears

PERIODICAL: V sb.: Vzaimozamenyayemost', tochnost' i metody ismereniya v  
mashinostr., Moscow - Leningrad, Mashgiz, 1958, pp. 223-234TEXT: The author considers cyclic errors of gears machined on gear-milling machines. Cyclic errors are all those errors which are periodically repeated at a given frequency within the limits of one revolution of the gear. Results of measuring the noise of a reducer are given. The highest noise of 112 db was observed at a frequency of ~ 1100 cps. The frequencies coincide with, or are multiples of the product obtained by multiplying the number of revolutions per second of the driving gear by the frequency of its actual cyclic error. In the example under consideration, the cyclic error frequency was 12, while the gear performed 90 revolutions per second. For precision gear-milling machines the diameter of the gear cutter ranges from 320 to 5000mm,*✓*

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S/123/59/000/09/10/036  
A002/A001

Measurement of Cyclic Errors in Turbine Gears

the ultimate kinematic error is 4-20 seconds, while the ultimate cyclic error is 0.4-6 seconds. When producing gears, it is recommended to exclude from checking: the differences of the circular pitches from tooth to tooth; the group pitch; the accumulated pitch error and the base pitch error. Measuring the cyclic error by a frequency meter is recommended. When cutting skew bevel gears the cyclic error will cause undulation of the lateral teeth surfaces with a wavelength of  $L = \pi d/z \cdot \sin \beta$ , where  $d$  - diameter of the wheel to be cut;  $z$  - number of teeth of the dividing gear of the machine;  $\beta$  - skew angle of a tooth of the wheel to be cut. When measuring the undulation, the measurement base must be equal to  $L$  or an odd multiple of  $L$ . At a base of  $2L$  or  $2KL$ , the indicator does not show deviations corresponding to cyclic errors. For the measurements, the points corresponding to the extreme positions of the indicator needle (maximum or minimum) must be marked. If the marked points are located on one generatrix of the cylinder and are parallel to the axis of the wheel, then a series of generatrices is obtained having a pitch between them which corresponds to the pitch of the cyclic error, equal to the number of teeth of the dividing gear of the machine tool. If the marked points are located in one side plane (v odnom tortsovom sechenii) of the wheel, but not along the axis, then this will mean a break in the helical line of the tooth. This break (deviation

✓

Card 2/3

82658

S/123/59/000/09/10/036

A002/A001

Measurement of Cyclic Errors in Turbine Gears

of the helix angle) is the result of errors caused by the guides, by temperature deformations and by other defects of the machine tool. If the marked points are located in systematic series, each of which is located in the side plane of the wheel, then this indicates cyclic errors in the feed train of the machine tool. During long gear rolling operations, cyclic errors, depending on the mechanism, can originate which may lead to a rejection of wheels, especially those having a small number of teeth. Checking with a frequency meter after the gear rolling is recommended in the same way as after gear cutting. The sensitivity of the frequency meter is 2 microns. There are 6 figures and 1 table.

Translator's note: This is the full translation of the original Russian abstract.

✓

Card 3/3

KOGAN, G.I.; KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor  
tekhn. nauk, prof., red.; TURETSKIY, I.Yu., kand. tekhn.nauk,  
red.; ONISHCHEMKO, R.M., red.izd-va; BANDINA, A.A., tekhn. red.

[Finishing gear wheels] Otdelka zubchatsykh koles. 2., perer. izd.  
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retsenzent; NIKITIN, P.S., inzhener, redaktor

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DLC: TJ1225.T8

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KOLCHIN, N.I., professor, redaktor; TURETSKIY, I.Yu., kandidat  
tekhnicheskikh nauk, redaktor; SHAVIYUGA, N.I., dotsent, redaktor;  
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deyatel' nauki i tekhniki RSPSR, doktor tekhn. nauk, prof.,  
red.; MAYDEL'MAN, E.D., inzh., retsenzent; VEYTS, V.L., kand.  
tekhn. nauk, red.; ONISHCHENKO, R.N., red.izd--va; BARDINA,  
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Experimental use of the multiple thread worm milling machines.

1949 111p.

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TJ1225.T8

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25(7)

PHASE I BOOK EXPLOITATION SOV/3203

Turetskiy, Iosif Yudelevich, Leonid Nikolayevich Lyubimkov, and Boris Vasil'yevich Chernov

Vosstanovleniye tekhnologicheskoy tochnosti zubofrezernykh stankov (Restoring the Accuracy of Gear-milling Machine Tools) Moscow, Mashgiz, 1957. 115 p. (Series: Bibliotekha zuboreza-novatora, vyp. 7). Errata slip inserted. 10,000 copies printed.

N. I.

Gen. Ed.: /Kolchin, Doctor of Technical Sciences, Professor; Reviewer: S. G. Printsental', Engineer; Ed.: N. I. Shavlyuga, Candidate of Technical Sciences, Docent; Editorial Board: N. I. Kolchin, I. Yu. Turetskiy, Candidate of Technical Sciences, and N. I. Shavlyuga; Chief Ed. (Leningrad Division, Mashgiz): S. A. Bol'shakov, Engineer; Ed. of Publishing House: V. P. Vasil'yeva; Tech. Ed.: R. Pol'skaya.

PURPOSE: This booklet is intended for skilled operators and setters of gear-milling machinery and foremen and process engineers in gear manufacture.

COVERAGE: The booklet deals with standards for accuracy in gear cutting, methods of overhauling precision gear-milling tools, and production of precision worm gears. Also described are means of increasing kinematic accuracy in gear-milling machines by means of corrective devices and typical processes of

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Restoring the Accuracy of Gear-milling Machine (Cont.) SOV/3203

producing worms and worm gears for indexing heads. No personalities are mentioned. There are 17 references, all Soviet.

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AVAILABLE: Library of Congress (TJ184.B5)

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Turetskiy, Iosif Yudelevich  
PHASE I BOOK EXPLOITATION

449

Turetskiy, Iosif Yudelevich; Lyubimkov, Leonid Nikolayevich; Chernov,  
Boris Vasil'yevich

Vosstanovleniye tekhnologicheskoy tochnosti zubofrezernykh stankov  
(Restoring the Precision of Gear-cutting Machinery)  
Moscow, Mashgiz, 1957. 115 p. (Bibliotekha zuboreza-novatora,  
vyp. 7) 10,000 copies printed.

Ed. (title page): Kolchin, N.I., Doctor of Technical Sciences,  
Professor; Reviewer: Printsental', S.G., Engineer; Ed. (inside  
book): Shavlyuga, N.I. Docent, Candidate of Technical Sciences;  
Ed. of Publishing House: Vasil'yeva, V.P.; Tech. Ed.:  
Pol'skaya, R.; Editorial Board of Series: Kolchin, N.I.,  
Professor, (Chairman); Turetskiy, I. Yu., Candidate of Techni-  
cal Sciences, and Shavlyuga, N.I., Docent, Candidate of Techni-  
cal Sciences; Chief Ed. of the Leningrad Branch of Mashgiz:  
Bol'shakov, S.A., Engineer.

PURPOSE: This pamphlet is one of a series on gear cutting and is  
intended for skilled machine operators, foremen, and technicians  
in gear cutting plants.

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Restoring the Precision of (Cont.)

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COVERAGE: This pamphlet, the 7th of a series, is issued by the Library for the Gear-cutter Innovator, and is a continuation of issue No. 6 Izgotovleniye osobo tochnykh peredach (Manufacture of High-precision Gear Drives). It contains a description of the methods and techniques for restoring and increasing accuracy in gear-cutting machines employed by a leading turbine reduction gear plant. In order to make this known-how readily available to other plants engaged in high-precision gear manufacture, this pamphlet presents in a concise manner the sequence of operations in checking the kinematic accuracy of machine tools and methods for correcting copying devices. There are detailed instructions on how to cut new precision indexing gear pairs which are indispensable for the improvement of accuracy in gear-cutting machines. It also explains to replace old indexing fixtures with new worm gear pairs with a higher number of teeth in order to reduce or to eliminate entirely cyclic errors in cutting very-high precision gears. No personalities are mentioned. There are 17 Soviet references.

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4. General characteristics of inaccuracies in gear- cutting machines	12
5. Geometrical inaccuracies in gear-cutting machines and their effect on the accuracy of the gears produced	13
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inzh., retsentsent; KOLCHINA, N.I., zasl. deyatel' nauki i  
tekhniki RSFSR, doktor tekhn. nauk, prof., red.; VAYDEL'MAN,  
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(Shipping--Finance) (Freight and freightage)

TURETSKIY, L.

USSR/Ships, Merchant  
Ships, Equipment and Supplies

Oct 47

"The Performance of the Fleet in the New Five-Year Plan," I. Ginzburg, L. Turetskiy, 5 pp

"Morskoy Flot" No 10

Resume of the goals set for the merchant fleet in the 1946-1950 Five-Year Plan. Present equipment is to be more completely utilized, operations expedited, and new equipment is to be added to carry out the plan.

PA 30T94

TURETSKIY, L.; GINZBURG, I.

Thirty years of sea transportation. Mor.flot 7 no.11:5-10 N '47.  
(Shipping) (Ships)

TURETSKIY, L.  
USSR/Merchant Fleet

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Dec 1947

"The Maritime Fleet on the Increase," I. Ginzburg, L. Turetskiy, 3½ pp

"Morskoy Flot" No 12

Maritime fleet has exceeded norm for first year of postwar Stalin Five-Year Plan. In 1947, plan had almost been fulfilled by November, an average of 20% increase over operations for similar period during 1946. Some data, all in percentage figures.

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TURETSKIY, L.

RA 1/A/162

**USSR/Engineering  
Shipping  
Ships, Cargo.**

May 48

"Capacity of the Fleet and Reduction of the Cost  
Price of Transportation," I. Ginzburg and L.  
Turetskiy, 4½ pp

"Morskoy Flot" No 5

First part of series on methods for reducing  
transportation costs. Discusses effect of  
capacity of fleet on actual cargo capacity and  
price per ton mile for cargo transported.

FDB

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DLC: V74. M6

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DLC: V74. M6

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4. Ships - Cargo

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TURETSKIY, L.

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1. Zamestitel' nachal'nika Planovo-ekonomicheskogo upravleniya  
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(Shipping)

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1. Zamestitel' nachal'nika Planovo-ekonomicheskogo upravleniya  
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TURETSKIJ, L.

Planning of shipments in marine transportation. Mer. flot. 24 no.9;36-40  
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(Merchant marine--Finance)

VISHNEPOL'SKIY, S.A., kand. ekon. nauk; BAYEV, S.M., inzh. putey soobshcheniya; BONDARENKO, V.S.; RODIN, Ye.D.; CHUVLEV, V.P.; TURETSKIY, L.S.; SMIRNOV, G.S.; SHAPIROVSKIY, D.B.; OBERMEYSTER, A.M.; SINTSIN, M.T.; KOGAN, N.D.; PETRUCHIK, V.A.; GRUNIN, A.G.; KOLESNIKOV, V.G.; MARTINOV, A.Ye.; KROTKIY, I.B. [deceased]; ZENEVICH, G.B.; MEZENTSEV, G.A.; KOLOMOYTSEV, V.P., kand. tekhn. nauk; ZAMAKHOVSKAYA, A.G., kand. tekhn. nauk; MAKAL'SKIY, I.I., kand. ekon. nauk; MITROFANOV, V.F., kand. ekon. nauk; CHILIKIN, Ya.A.; BAKAYEV, V.G., doktor tekhn. nauk, red. Prinimali uchastiye: DZHAVAD, Yu.Kh., red.; GUBERMAN, R.L., kand. ekon. nauk, red.; RYABCHIKOV, P.A., red.; YAVLENSKIY, S.D., red.; BAYRASHEVSKIY, A.M., kand. tekhn. nauk, red.; POLYUSHKIN, V.A., red.; BALANDIN, G.I., red.; ZOTOV, D.K., red.; RYZHOV, V.Ye., red.; BOL'SHAKOV, A.N., red.; VUL'FSON, M.S., kand. ekon. nauk, red.; IMITRIYEV, V.I., kand. ekon. nauk, red.; ALEKSANDROV, L.A., red.; LAVRENOVA, N.B., tekhn. red.

[Transportation in the U.S.S.R.; marine transportation] Transport SSSR; morskoj transport. Moskva, Izd-vo "Morskoi transport," 1961. 759 p. (MIRA 15:2)  
(Merchant marine)

27574  
S/190/61/003/009/009/016  
3110/B101

15.8663

AUTHORS: Sokolov, L. B., Kudim, T. V., Turetskiy, L. V.

TITLE: Polycondensation at the liquid-gas interface. I. Rules governing the synthesis of polyhexamethylene oxamide in the gaseous phase

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 9, 1961,  
1369-1376

TEXT: The authors studied the rules governing the polycondensation at the gas-liquid interface using aliphatic diamines (DA) (hexamethylene diamine (HMD)), and acid dichlorides. This study was carried out on polyhexamethylene oxamide (PHMO) and oxalyl chloride (OC). DA was dissolved in water, and OC, which was in pure condition, or with N<sub>2</sub>, air, etc., in the gaseous phase, was bubbled through the solution. During this bubbling, PHMO films accumulated in the upper part of the vessel. The N<sub>2</sub> supply varied between 1.56 and 1.68 liters/hr. The diamine concentration was 0.2 moles/liter. In order to avoid vapor condensation and to make the polycondensation at the liquid-gas interface possible, the degree of saturation  $\alpha = P/P_0$  had

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Polycondensation at the ...

to be less than unity. The heat of evaporation calculated from the dependence of  $\log P_0$  on the reciprocal temperature by the Clapeyron-Clausius equation was 8.5 kcal/mole. The resultant polymer was washed with  $H_2O$  and  $C_2H_5OH$ , and then dried. The following data were studied:

Dependence of yield and molecular weight (MW) on: temperature in the reaction vessel and evaporator, diamine concentration in aqueous phase, pH of the aqueous phase, etc. For comparison purposes, PHMO was also prepared by condensation (I) at the interface between  $H_2O$  and  $CH_3C_6H_5$ .

Whereas the MW of PHMO decreases with increasing temperature in condensation I at the interface of two liquids, both MW and yield increase in the condensation (II) in the gaseous phase. In the latter case a mixture containing 0.0067 moles/liter OC was bubbled through 150 cm<sup>3</sup> diamine solution for 1 hr. In I, the PHMO yield (referred to OC) was 2%, the intrinsic viscosity 0.25-0.45, in II the yield was 22% (may be increased up to 50%), and the intrinsic viscosity 0.84. The low data obtained for I are explained by hydrolysis. The increases of yield and viscosity with temperature in the case of II are due to reduced hydrolysis owing to decreased solubility, of the acid chloride vapor with rising temperature.

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PHMO yield and viscosity do not depend on the HMD concentration, as it is characteristic of the condensation in gaseous phase. When the OC concentration is the gaseous increases, the PHMO yield decreases, and the intrinsic viscosity increases. The higher the temperature of evaporation ( $t_{evap}$ ), the lower may be the temperature of the reaction vessel ( $t_{reac}$ ). At  $t_{evap} = 10^\circ\text{C}$  ( $\alpha_{evap} = 0.93$ ),  $t_{reac}$  may be  $< 10^\circ\text{C}$ , at  $t_{evap} = 58^\circ\text{C}$  ( $\alpha_{evap} = 0.34$ ), it may be  $36^\circ\text{C}$ . For a 15-min experiment and a volume of the aqueous phase of  $250 \text{ cm}^3$  it was found that the PHMO viscosity did not depend on the height of the aqueous layer. If the height of the aqueous layer is more than 5-15 mm, the yield does not depend either on it, because in this case the time of macromolecule formation is commensurable with the sojourn time in water. The common features of I and II are: (1) reaction in the absence of equimolecular ratios; (2) production of heat-resistant compounds; (3) dependence of yield on the pH of the aqueous phase. This indicates that II apparently takes place in the polymer film. II is also applicable to acid chlorides which are more stable than OC. The authors thank A. P. Moskvina for assistance in experiments. There are 2 figures 4 tables, and 12 references: 7 Soviet and 5 non-Soviet. The three most recent Card 3/4

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B110/B1C1

Polycondensation at the ...

references to English-language publications read as follows: Ref. 1: J. A. Somers, Man-Made Text., 381, 60, 1956; Ref. 7: P. W. Morgan, S. L. Kwolek, J. Polymer Sci., 40, 137, 299, 1959; Ref. 11: R. G. Beaman et al. J. Polymer Sci., 40, 326, 1959.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskikh smol,  
Vladimir (Scientific Research Institute of Synthetic Resins,  
Vladimir)

SUBMITTED: November 21, 1960

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L 27326-66, EWT(m)/EWP(j)/I IJP(c) WN/RM  
 ACC NR: AP6008986 (A)

SOURCE CODE: UR/0190/65/007/011/1997/2000

AUTHORS: Sokolov, L. B.; Turetskiy, L. V.

ORG: Vladimir Scientific Research Institute of Synthetic Resins (Vladimirskiy nauchno-issledovatel'skiy institut sinteticheskikh smol)

TITLE: Relation between heterophase copolycondensation and monomer absorption characteristics

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 11, 1965, 1997-2000

TOPIC TAGS: polycondensation, copolymer, absorption, polymerization absorption, monomer

ABSTRACT: This investigation was conducted to extend an earlier published work of L. V. Turetskiy, L. B. Sokolov, and V. Z. Nikonov (Sb. Geterotsepmnyye vysokomolekulyarnyye soyedineniya, izd. Nauka, 1964, str. 107). It was desired to determine the role of adsorption processes in a heterogeneous copolycondensation (gas-liquid) reaction. The relationship

$$\ln \frac{1}{T_r} = \Delta n \ln \beta$$

was tested on a number of results obtained earlier, L. B. Sokolov, and L. V. Turetskiy (Vysokomolek. soyed., 6, 346, 1964), where  $r$  and  $r_0$  are the apparent and true copoly-condensation constants,  $\Delta n$  is the difference in the number of repeating numbers in

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the reacting molecules A and B, and  $\beta$  is Traube's coefficient. The results of the test are presented graphically. It was found that  $\ln 1/r$  was a linear function of  $\Delta n$ , and that the values of  $\beta$  for the  $\text{CH}_2$  group for the homologous series of aliphatic compounds (as derived from the slope of the straight line) are in good agreement with published values, derived from surface tension measurements. It is concluded that adsorption processes play a dominant role during heterophase copoly-condensation. Orig. art. has: 1 table and 1 graph.

SUB CODE: 11/ SUBM DATE: 05Jan65/ ORIG REF: 009/ OTH REF: 001

Card 2/2

TURETSKIY, L.V.; SOKOLOV, L.B.

Effect of surface tension at the interface in the interfacial  
formation of polyamides. Vysokom. soed. 3 no.10:1449-1455 0  
'61. (MIRA 14:9)

1. Nauchno-issledovatel'skiy institut sinteticheskikh smol,  
Vladimir.  
(Polyamides) (Surface tension)

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S/190/61/003/010/003/019  
B130/B110

AUTHORS: Turetskiy, L. V., Sokolov, L. B.

TITLE: Effect of surface tension at the liquid boundary in interfacial synthesis of polyamides

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 10, 1961,  
1449-1455

TEXT: The authors studied the effect of surface tension at the boundary of two liquids on the molecular weight of the resulting polymers (polyamides). They used solvents with a sufficient surface tension at the interface with water (octane, carbon tetrachloride, and chloro benzene). The Eastern German E-30 emulsifier, a sodium lauryl sulfate (>92%), was used as surface-active substance for measuring the surface tension. The authors studied the effect of emulsifier additions and, thus, the effect of interfacial tension in the synthesis of poly-p-phenylene terephthalamide, polyethylenic terephthalamide, polyhexamethylene terephthalamide, and polyhexamethylene sebacinamide. The polyamide synthesis was performed with ✓

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or without stirring. The heavier phase was first put in a crystallizer; then, the lighter phase was added slowly along the walls. The resulting polymer film was removed cautiously. The intrinsic viscosity of the polymers was determined in concentrated sulfuric acid. Since a direct measurement of the surface tension at the interface of liquids used for polycondensation (diamine- and acid chloride solution) is impossible without changing the reaction conditions, the authors performed measurements of model systems: organic solvents - aqueous solution of diamine and emulsifier, according to the Rebinder method (N. V. Mikhaylov et al., Vysokomolek. sooyed. 2, 989, 1960). The measurements showed that the tension at the interface aqueous diamine solution - organic solvent was lower than at the interface water - organic solvent. The following was found: (1) The intrinsic viscosity of polyamides decreases with increasing emulsifier concentration in the aqueous phase; the tension at the interface decreases at the same time. (2) The molecular weight of polyamides decreases with decreasing tension at the interface of the liquids. The polymer yield, however, does not change. (3) The tension at the interface acts differently on different polyamides (Fig. 2). In polyamides with aliphatic links on their chains, the effect of the dissolving power of the organic

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Effect of surface tension at the liquid ... B130/B110

phase is much higher. By regulation of the surface tension it is possible to prepare high-molecular compounds already at the beginning of the reaction. At that stage, the diffusion is inhibited by the surface tension at the interface. A paper by A. S. Shpital'nyy, Ya. A. Kharit, R. B. Chernomordik, D. G. Kulakova (Zh. prikl. khimii, 33, 1150, 1960) is mentioned. V. P. Ivanova and L. A. Stepanova assisted in the experiments. The authors thank A. A. Zhukhovitskiy for a discussion. There are 2 figures, 3 tables, and 10 references: 7 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: P. W. Morgan, SPE Journal, 15, 485, 1959; P. W. Morgan, S. L. Kwolek, J. Polymer Sci. 40, 299, 1959; W. H. Carothers, Trans. Faraday Soc., 32, 39, 1936.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskikh smol,  
Vladimir (Vladimir Scientific Research Institute of Synthetic  
Resins)

SUBMITTED: October 24, 1960

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Card 3/5

SOKOLOV, L.B.; TURETSKIY, L.V.; KUDIM, T.V.

Synthesis of high molecular weight polyoxamides by polycondensation at the liquid - gas interface. Vysokom. soed. 2 no. 11:17<sup>44</sup>-1745 N '60.  
(MIRA 13:11)  
(Oxamide)

SOKOLOV, I.B.; TURETSKIY, L.V.

Liquid - gas interfacial polycondensation. Part 7. Vysokom.sod. 6 no.  
2:346-351 F '64. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut sinteticheskikh smol, Vladimir.

SOKOLOV, L.B.; TURETSKIY, L.V.

Effect of the dissolving capacity of the organic phase in the  
interfacial synthesis of polyamides. Vysokom.sosed. 2 no.5:  
710-715 My '60. (MIRA 13:8)

1. Nauchno-issledovatel'skiy institut sinteticheskikh smol. g.  
Vladimir.  
(Amides)

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S/190/60/002/C1/025/027  
B004/B060AUTHORS: Sokolov, L. B., Turetskiy, L. V., Kudim, T. V.

TITLE: Production of High Molecular Polyoxamides by Polycondensation at the Liquid - Gas Interface

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 11,  
pp. 1744 - 1745

TEXT: The synthesis of high molecular polyoxamides in the melt is complicated by their poor thermal stability, and in the liquid - liquid interface by the hydrolysis of oxalyl chl'ide. For this reason, the authors performed the polycondensation in the gas - liquid interface. The following compounds were obtained on the interaction of oxalyl chloride gas with aqueous solutions of diamines: polyhexamethylene oxamide with intrinsic viscosity  $[\eta] = 0.70$ , yield 48%, as against  $[\eta] = 0.27$ , yield 10% in polycondensation in the water-toluene interface; and poly-p-phenylene oxamide,  $[\eta] = 1.22$ , yield 32%, as against  $[\eta] = 0.53$ , yield 13% in the water-toluene interface. A study of the effect of temperature, pH, and other factors revealed that the rules

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Production of High Molecular Polyoxamides      S/190/60/002/011/025/027  
by Polycondensation at the Liquid - Gas      B004/B060  
Interface

govern the polycondensation in the gas - liquid interface are different from those holding for the reaction in the interface between water and organic liquid. In the authors' opinion, this method is also applicable to the synthesis of other polymers. There are 1 table and 4 references: 1 Soviet, 2 US, and 1 British.

SUBMITTED: June 29, 1960

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